Applying Lean Thinking to the DoD Consumable Spares Supply Chain . . .

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Background . . .

The Beginnings of Lean

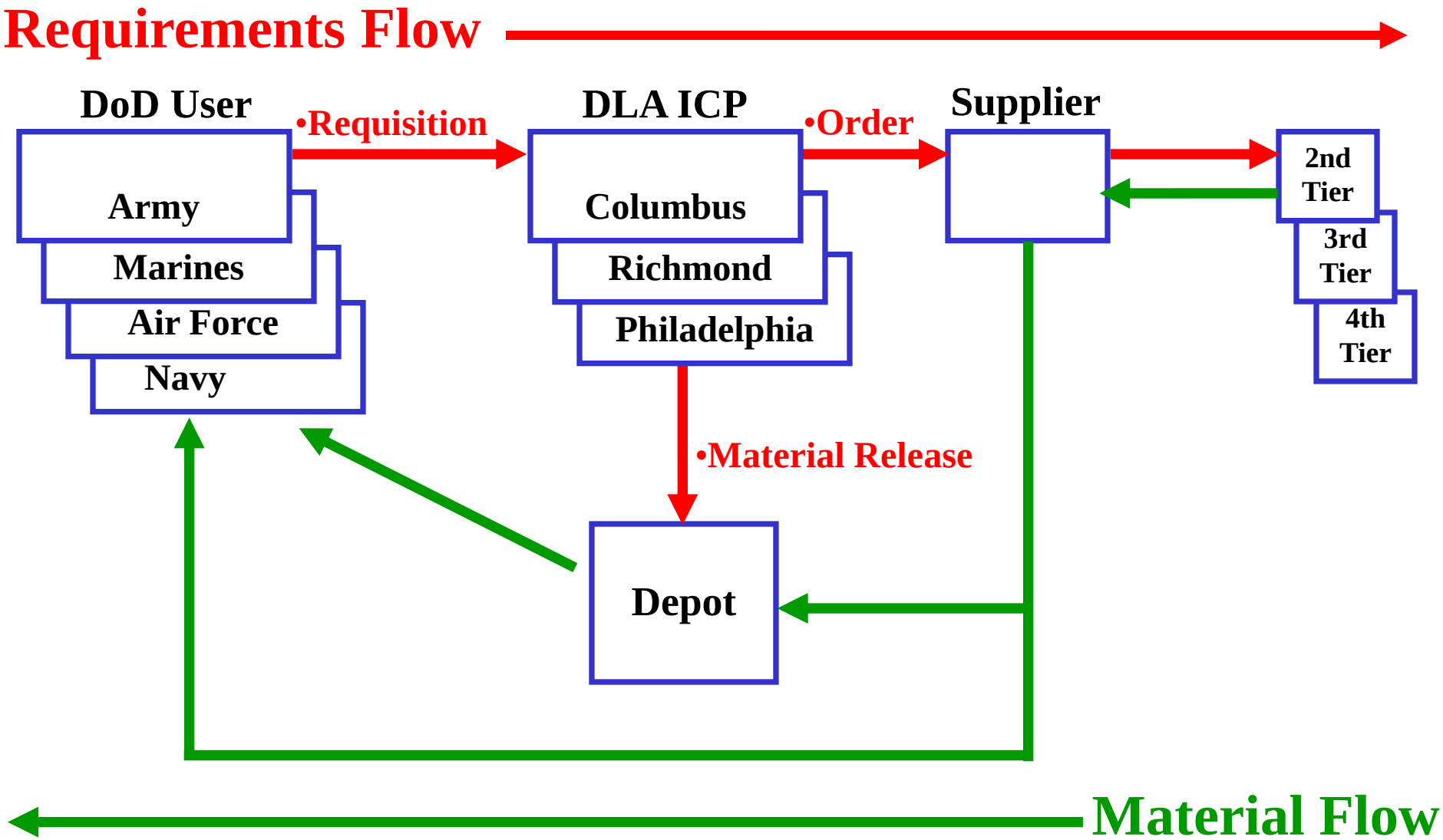
- Taiichi Ohno and the Toyota Production System
  - Started After World War II
- "Lean Thinking" - Chronicled in The Machine That Changed the World, 1990
- Womack and Jones, Lean Thinking, 1996

Lean Principles

- Specify Value
  - Customer Determines Value
- Identify the Value Stream
  - Processes Used to Create Value
  - Value Stream Analysis
- Make Value-Creating Steps Flow
  - Remove Waste ("Muda")
- Customers Pull Products or Services from the Value Stream
  - Provide Only What's Needed When It's Needed
- Perfection
  - Continuous Improvement

Maximize Value–Minimize Waste!

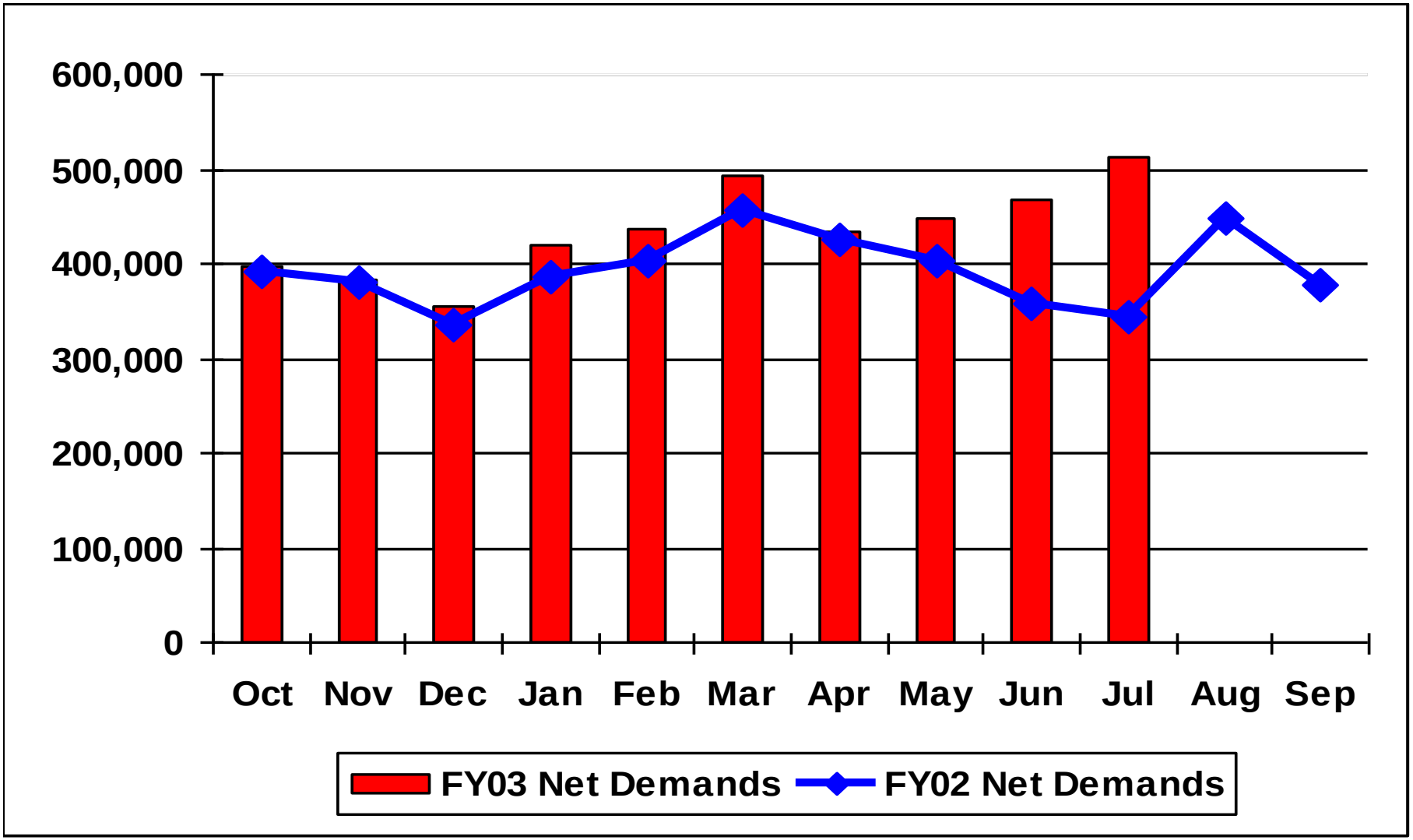
The DoD Consumable Supply Chain



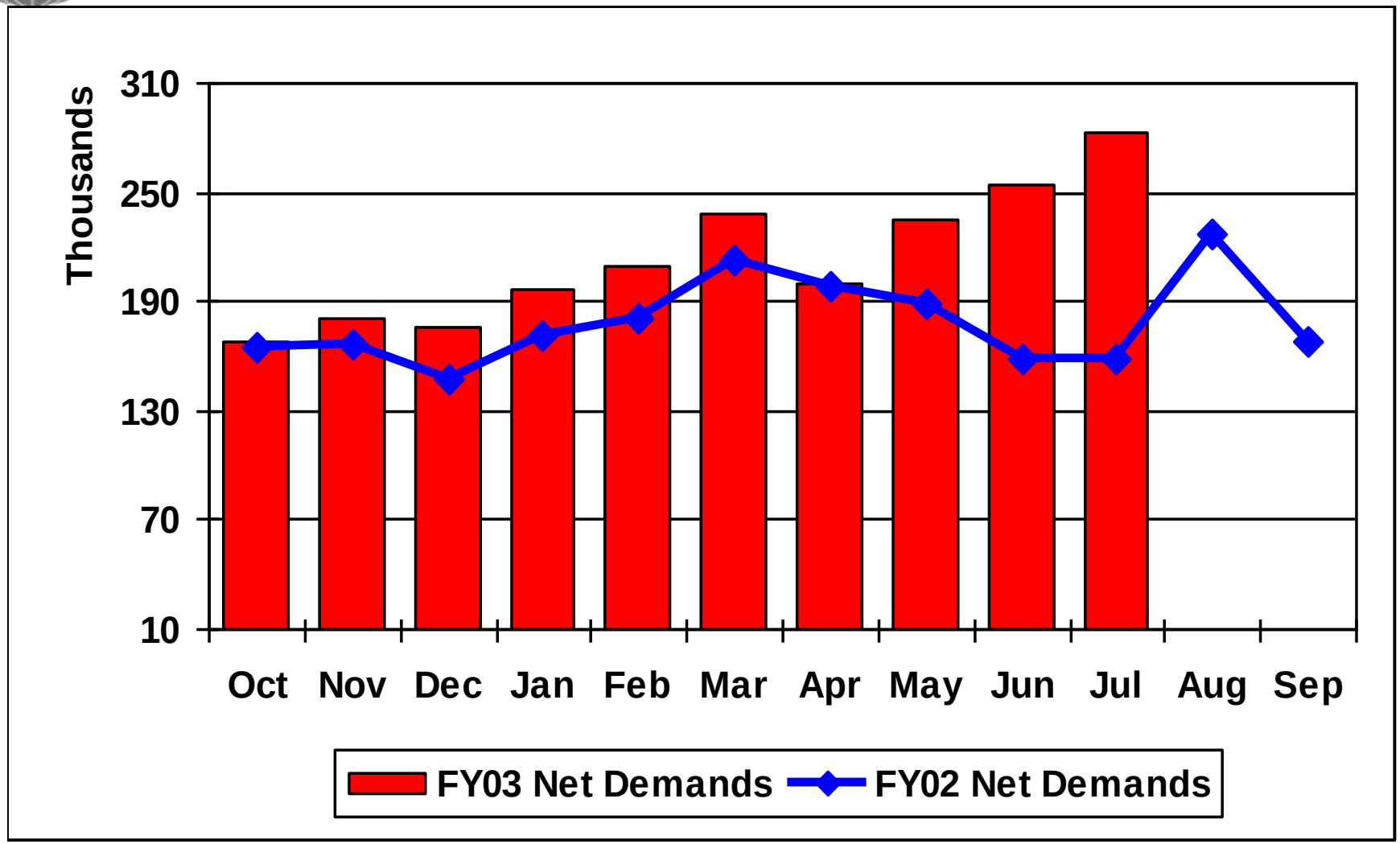
Supply Chain Management In DoD... A Tough Environment

- Challenges
  - Global Requirements
  - Demand Surges – Little or No Warning
  - Broad Array of Systems
  - Varying Fleet Age
  - Delays May Have Severe Consequences

A Look at Today's Demands



Land Demands



Other Unique Aspects

- Limited Funding
- Products/Services Not the Only Objective

  Ensure Level Playing Field – No One Unfairly Excluded

  Promote Socio/Economic Goals

Result: Purchasing Highly Regulated - FAR/DFARS

Given the DoD Environment . . .

Can the Concepts, Principles and Practices of Lean be Applied to the DLA Consumable Supply Chain?

A B S O L U T E L Y !

Lean Thinking in DoD is Not New

The US Air Force Asked the Same Question in 1993 for the Military Aircraft Industry. As a Result, Lean Aerospace Initiative was Born.

A Consortium of Government, Industry, Labor and Universities.

Office of Secretary of Defense
US Air Force
US Army
US Navy
DCMA
DAU
NASA

Aerojet
Avcorp Industries
BAE Systems North America
Curtis-Wright Flight Systems
Hamilton Sunstrand
Harris Corporation
L3 Communications
Lockheed Martin
Northrop Grumman
Pratt & Whitney

Raytheon
Rockwell Collins
Rolls Royce Corp
Sikorsky Aircraft
Textron System Corp
The Boeing Company
MIT
International Assoc of Machinists

Consider this Comment from Dr. Jacques S. Gansler, Former Under Secretary of Defense (Acquisition and Technology) . . .

“ . . . we spend more than $80 billion annually in the DoD logistics area - - and don’t achieve world-class performance in either responsiveness or costs - - this is an extremely fruitful one to pursue…”

- Remarks to Lean Aerospace Initiative Executive Council, May 4, 1999

You've Heard What the DoD Customer Wants . . .

- Responsiveness
- Quality
- Affordability

Here's How You Know if the Supply Chain Delivered . . .

This is a DoD Supply Chain Success Story . . .

. . . And <u>YOU</u> Made it Happen

April 28, 2002
Outside Kandahar Airfield

Opportunities for Lean

- Customer Wait Time
- Forecasting
- Administrative Lead Time
- Inventory
- Defects

Communications Throughout the Supply Chain is Key

Actual E-Mail from a DSCC Supplier

Lewis, Milton K, COL (DSCC)

From:
Sent: Friday, March 14, 2003 5:23 AM
To: Land.Director@dscc.dla.mil
Subject: nsn 2920004555835

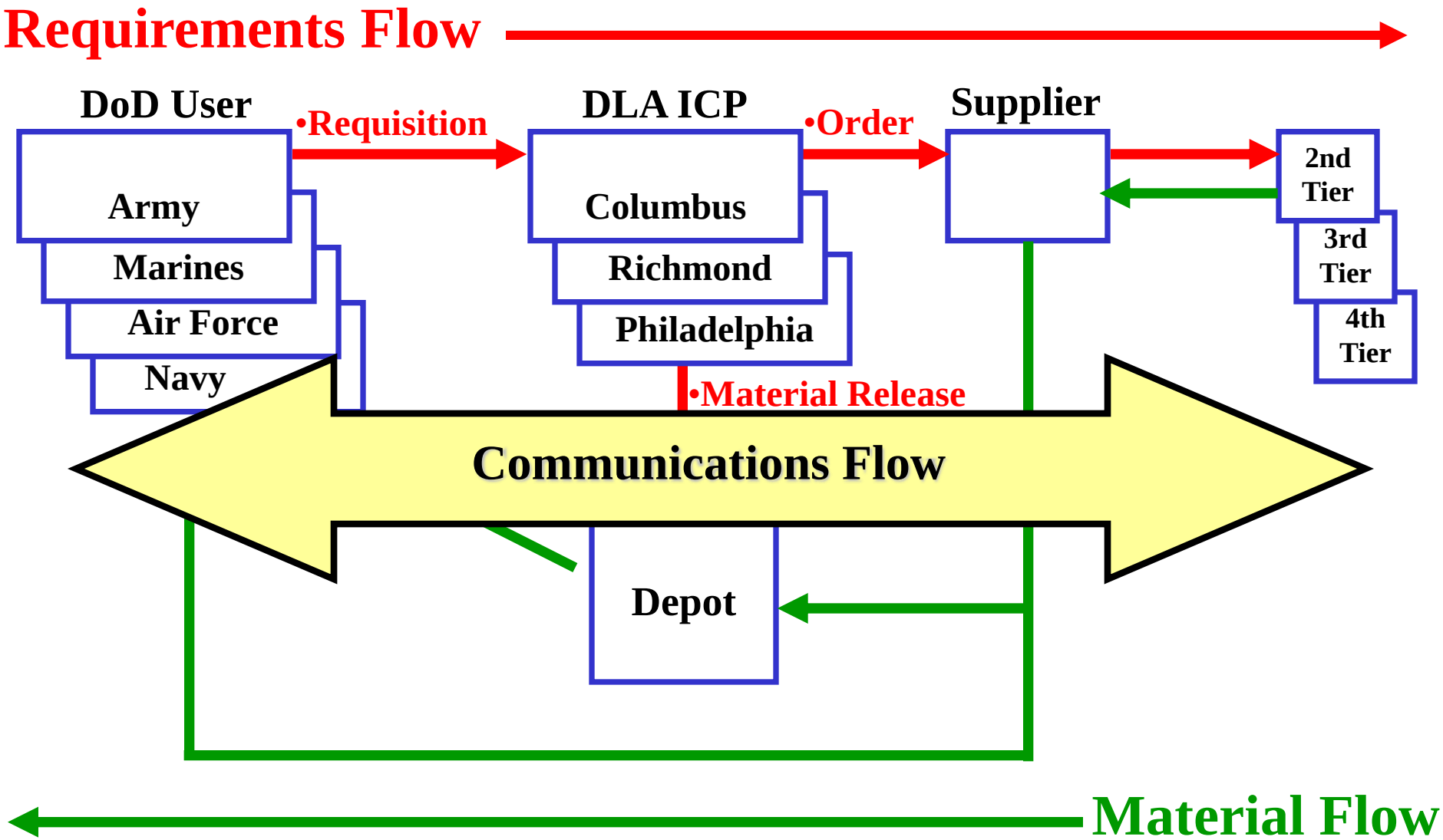
would like to know the usage of this item per year. We are in the process of building inventory of certain types of parts and components that the DoD buys.
This paticular item can be in our inventory and ready to ship within a day.
Thank You

This supplier has the right idea . . .

Proactive versus reactive and . . .

Communicate, Communicate, Communicate

Timely Information is Critical



Approaches for Applying Lean Thinking

Identify High Performing Suppliers	•Automated Best Value System (ABVS)
Long-Term Stable Relationships	•Strategic Supplier Alliances •Corporate Contracts •Long-Term Contracts
Leverage Technology	•DSCC Internet Bid Board System (DIBBS) •Procurement Automated Contract Evaluation (PACE) •3D CAD Models •EC/EDI
Enhance Information Flow	•Acquisition Forecast •Defense Inventory Locator Network (DIL NET) •Customer Operations Division •Supplier Conference •Visits •Seminars

Entire Supply Chain Must "Think Lean"

Seven Forms of Manufacturing Waste

- Overproduction
- Inventory
- Extra Processing Steps
- Motion
- Defects
- Waiting
- Transportation

- Each Stakeholder Must Continually Assess Their Processes
  - Lean Enterprise Self-Assessment Tool
  - Transition to Lean Guide Book for Leaders
  - Supplier Management Assessment Tool (Beta)
- http://lean.mit.edu

Summary

- "Lean Thinking" - Adds Value to the DoD Consumable Supply Chain
- All Stakeholders Must Consider Impact Up/Down Supply Chain
- Communications is Key to Supply Chain Optimization